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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/889,182	01/10/2002	Frank Breitling	4121-126	8533

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INTELLECTUAL PROPERTY / TECHNOLOGY LAW
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EXAMINER	
GRUN, JAMES LESLIE	
ART UNIT	PAPER NUMBER
1641	

DATE MAILED: 12/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/889,182	BREITLING ET AL.	
	Examiner	Art Unit	
	James L Grun	1641	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 August 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) *15-20* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *1-20* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *02/15/02*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Technology Center 1600, Group 1640, Art Unit 1641.

Applicant's election with traverse of Group IV, claims 1-14, in the communication filed 25 August 2004 is acknowledged. The traversal is on the ground(s) that the different groups define a single invention and that the closely related subject matter could be economically examined together. This is not found persuasive because, for the reasons of record, the different inventions share no corresponding technical feature. The requirement is still deemed proper and is therefore made FINAL.

Claims 15-20 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no (allowable) generic or linking claim.

The following is a quotation of the first paragraph of 35 U.S.C. § 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The specification is objected to under 35 U.S.C. § 112, first paragraph, as failing to provide an adequate written description of the invention, and failing to adequately teach how to make and/or use the invention, i.e. failing to provide an enabling disclosure.

Claims 1-14 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one

skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention, and which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Applicant desires a method for the selection of particular cells which express particular monoclonal antibodies from a cell population. However, applicant's specification provides no written description or guidance for inhibiting the uptake of secreted antibodies by undesired non-secreting cells in the population having the instantly disclosed antibody binding molecules expressed thereon. Thus, one would not be assured of the ability to select the desired producer cell(s) from the population because, absent further guidance from applicant, one would be unable to identify and specifically separate the secreting cell(s) from a population of cells which are all capable of binding the secreted product.

Claims 1-6 and 9-14 are rejected under 35 U.S.C. 112, first paragraph, because the specification does not reasonably provide enablement for expression of cell-surface antibody binding proteins, generally, other than those expressed by the particular exemplified expression vectors which function in the invention. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims. There are many factors which need be considered in obtaining expression of any given protein in a given cell and the art recognizes that such is often unpredictable (see e.g. Goeddel, Meth. Enz. 185: 3, 1990). Even if the antibody binding protein were stably co-expressed with relevant antibody in a given cell, which is

unpredictable as set forth below, the binding protein would need to be appropriately positioned and have sufficient affinity to bind and retain antibody for a time sufficient for selection (see e.g. Miltenyi et al., WO 94/09117, page 11). Applicant's mere suggestion of potential binding protein constructs with undefined signal peptides and membrane anchors does not assure one in the art that the suggested constructs would predictably express binding proteins functional in the invention. Moreover, in the instant case, stable cell-surface expression of the antibody binding protein in the parent cell as well as after fusion in the hybrid would appear to be required. This would seem to be entirely unpredictable because of the random shedding of genetic elements from hybridomas and would need to be empirically determined for every cell and every fusion. Such experimentation to determine if any fusion event randomly resulted in the retention of expression of the antibody binding protein, correctly positioned, in a cell in addition to production of the desired antibody by that cell so that the method could be performed for selection, without any assurance of success for any given fusion event, would seem undue experimentation. Absent further written description and guidance from applicant, one would not be assured of the ability to perform the method with any predictability for any given fusion.

The specification is objected to and claims 1-14 are rejected under 35 U.S.C. § 112, first paragraph, as failing to provide an adequate written description of the invention and failing to provide an enabling disclosure, because the specification does not provide evidence that the claimed biological materials are: (1) known and readily available to the public; (2) reproducible from the written description; or, (3) deposited in compliance with the criteria set forth in 37 CFR §§ 1.801-1.809.

It is unclear if cell lines and vectors having the exact chemical identity and properties of the cell lines and vectors designated X63-Ag8.653.3, pSEX11L4, pSEX11G2*, and pSEX15G2 are known and publicly available, or can be reproducibly isolated without undue experimentation. Accordingly, filing of evidence of the reproducible production of the cell lines and vectors necessary to practice the instant invention or filing of evidence of deposit is required. Without a publicly available deposit of the above cell lines and vectors, one of skill in the art could not be assured of the ability to practice the invention as claimed. Exact replication of the cell line and vectors are unpredictable events. A suitable deposit of the cell line and vectors would satisfy the enablement requirements of 35 U.S.C. § 112, first paragraph. See the criteria set forth in 37 CFR §§ 1.801-1.809.

If the deposits are made under the terms of the Budapest Treaty, then an affidavit or declaration by Applicant, or a statement by an attorney of record over his or her signature and registration number, stating that the specific biological materials have been deposited under the Budapest Treaty, that the biological materials will be irrevocably and without restriction or condition released to the public upon the issuance of a patent and that the biological materials will be replaced should they ever become non-viable, would satisfy the deposit requirement made herein.

If the deposits have not been made under the Budapest Treaty, then in order to certify that the deposits meet the criteria set forth in 37 CFR §§ 1.801-1.809, applicant may provide assurance of compliance by an affidavit or declaration, or by a statement by an attorney of record over his or her signature and registration number, showing that:

(a) during the pendency of this application, access to the invention will be afforded to the Commissioner upon request;
(b) all restrictions upon availability to the public will be irrevocably removed upon granting of the patent;
(c) the deposits will be maintained in a public depository for a period of 30 years or 5 years after the last request or for the effective life of the patent, whichever is longer;
(d) the deposits were viable at the time of deposit; and,
(e) the deposits will be replaced if they should ever become non-viable.

Applicant is also reminded that information regarding the deposits, such as the address of the depository, in addition to the accession numbers of the deposits and the date(s) of the

deposits, **must** be added to the specification by means of filing an amendment as required by 37 CFR §1.809(d). If the deposits are made after the effective filing date of the application, applicant must provide the proper corroboration that the deposited material is the biological material specifically identified in the application (see 37 CFR § 1.804(b) and MPEP § 2406.02).

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-14 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1-14 are method claims and, as such, they should clearly set forth the various method steps in a positive, sequential manner using active tense verbs such as mixing, reacting, and detecting. These claims are indefinite because without any active, positive steps delimiting how the method is actually practiced it is unclear what method/process applicant is intending to encompass. The claims should also clearly state each component used in the method and the relationship of the various components, and should not be a mere cataloging of parts. The claims should also conclude with a step relating the method result to the purpose of the method, preferably to the purpose as also set forth in the preamble of the claim. In these claims, "the" fusion, cell surface, binding of the antibodies, antibody binding proteins, and the expression vectors lack antecedent basis.

In claim 2 and claims dependent thereupon, "the" antibody specificity lacks antecedent basis.

In claim 7, it is believed that --Ig kappa-- was intended.

In claim 14, improper Markush language is used to claim the members of the group. The alternatives "selected from...or" or "selected from the group consisting of...and" are acceptable.

The art made of record and not relied upon is considered pertinent to applicant's disclosure.

Miltenyi et al. (WO 94/09117) teach direct selection of cells which secrete a product, including hybridomas, by labeling the producer cells in a population with the secreted product therefrom and detecting the products on the cell surface (see e.g. pages 22-23). The cells are coupled at their surface with a specific binding partner for capturing the product, including anchoring the binding partner in or on the cell membrane. The reference contemplates isolating cells producing a product from encoding DNA introduced into the cells (see e.g. pages 24-25). However, the reference relies on anchoring the specific binding partner by chemical means and does not teach introducing an expression vector for the specific binding partner into the cells.

Holmes et al. (J. Immunol. Meth. 230: 141, 1999) teach a method of cell selection.

Assenmacher et al. (US 6,576,428 B1) teach a method for selection of T cells.

Fandl et al. (US 2002/0168702 A1) teach a method of cell selection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James L. Grun, Ph.D., whose telephone number is (571) 272-0821. The examiner can normally be reached on weekdays from 9 a.m. to 5 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long Le, SPE, can be contacted at (571) 272-0823.

The phone numbers for official facsimile transmitted communications to TC 1600, Group 1640, are (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application, or requests to supply missing elements from Office communications, should be directed to the Group receptionist whose telephone number is (571) 272-1600.

James L. Grun, Ph.D.
November 19, 2004

CHRISTOPHER L. CHIN
PRIMARY EXAMINER
GROUP ~~1800~~ 1641
11/20/04